

IN THE CLAIMS:

- 1 1. A transponder for an RFID system, comprising:
 - 2 a) a substrate including RF receiving and transmitting means;
 - 3 b) data storage means storing packetized data in data formats
 - 4 transportable in the Internet; and
 - 5 c) identifying code in the format identifying the data format.

- 1 2. The transponder of Claim 1 further comprising:
 - 2 d) signal means responsive to an activation signal for transmitting or
 - 3 receiving and storing packetized data.

- 1 3. The transponder of Claim 2 wherein the data formats are UDP and IP, alone
- 2 or in combination.

- 1 4. The transponder of Claim 2 wherein the packetized data is at least partly
- 2 compressed.

1 5. A mobile device in a RFID system, comprising:

2 a) signal apparatus transmitting activation signals and sending/receiving
3 packetized datagrams transportable in the Internet to/from at least one transponder;

4 b) a communication protocol stack processing and routing packetized
5 datagrams within the device or to a network;

6 c) stored programs operating the device in the RFID system and
7 implementing communications with a network; and

8 d) reading apparatus processing packetized datagrams from a transponder.

1 6. The mobile device of Claim 5 further comprising:

2 e) at least one application stored in the device and responsive to the
3 packetized data.

1 7. The mobile device of Claim 5 wherein the packetized datagram is in UDP or IP or
2 combined UDP/IP format including a header with at least partly compressed or shortened or
3 omitted fields.

1 8. The mobile device of claim 6 further comprising:

2 f) header processing means decompressing or expanding or providing
3 omitted fields in the datagram.

1 9. The mobile device of Claim 8 further comprising:

2 g) parsing means processing datagrams for transmission to the network.

1 10. The mobile device of Claim 7, wherein the packetized datagrams are at least
2 partly compressed.

1 11. A RFID system, comprising:

2 a) a transponder containing packetized datagrams in data formats
3 transportable in the network and responsive to activation signal;

4 b) a mobile terminal generating the activation signals and sending/receiving
5 the packetized datagrams to/from the transponder;

6 c) a communication protocol stack stored in the mobile terminal
7 processing and routing the datagrams;

8 d) a network linked to the terminal receiving and transmitting the
9 packetized datagrams; and
10 e) a reader in the terminal processing the packetized datagrams transmitted
11 from the transponder.

1 12. The RFID system of Claim 11 wherein the reader is located in the network.

1 13. The RFID system of Claim 11 wherein the communication protocol stack checks
2 a checksum in the packetized datagram against the packet contents and notifies the reader the
3 transmission has failed if the checksum is not valid.

1 14. The RFID system of Claim 13 wherein the communication protocol stack requests
2 a re-transmission from the transponder if the checksum is not valid.

1 15. The RFID system of Claim 13 wherein the communication protocol stack drops
2 the packetized datagram or notifies an application running in the terminal if the re-transmission
3 is unsuccessful.

1 16. The RFID system of Claim 13 wherein the communication protocol stack
2 transmits the packetized datagram to an application running in the terminal or to an application
3 running in the network.

1 17. The RFID system of Claim 13 wherein the communication protocol stack parses a
2 header in the packetized datagram and routes the packetized datagram to a destination identified
3 in the header if a checksum in the packetized datagram is valid.

1 18. The RFID system of Claim 13, wherein the packetized datagrams are at least
2 partly compressed.

1 19. A method for routing packetized data between a data carrier and destination
2 address comprising:

- 3 a) receiving and sending a data packet from and to the data carrier;
- 4 b) identifying a format of the data packet;
- 5 c) processing the data packet according to the identified format; and
- 6 d) routing the processed data packet to a destination address.

1 20. The method according to claim 19, wherein the data packet comprises an
2 identification data, a header data and a payload data.

1 21. The method according to claim 19 wherein the data packet without identification
2 data is transportable in the Internet.

1 22. The method according to claim 19, wherein the data carrier is an RFID tag.

1 23. The method according to claim 19, wherein the destination address is an internet
2 address (IP address) or an IP protocol port or both.

1 24. The method according to claim 20, wherein the header data is UDP header data.

1 25. The method according to claim 20, wherein the header data is at least partly in
2 compressed form.

1 26. The method according to claim 25, wherein the processing comprises
2 decompressing the received header data.

1 27. The method according to claim 20 wherein the payload data is at least partly in
2 compressed form.

1 28. The method according to claim 20 wherein the payload data is in uncompressed
2 form.

1 29. The method according to claim 20 wherein the header data is standard IP protocol
2 packet header data.

1 30. The method according to claim 19 wherein the routed packets can be directed to
2 a network or an application within the device.

1 31. The method according to claim 19, wherein the network can be an external
2 network (e.g. the Internet) or a local network (such as a personal area network, or a local area
3 network).

1 32. A method for writing a packetized data to a data carrier, where the data carrier is
2 an RFID tag.

1 33. A system for routing packetized data comprising:
2 a) at least one data carrier having at least one data packet embedded therein;
3 b) a data receiving (reading) device or data sending (writing) device for
4 receiving or sending the at least one embedded data packet from the said at least one data carrier;
5 c) a data routing device connectable to the data receiving device for routing
6 the received data packet to a destination address; An application receiving the routed data packet.

1 34. A system of Claim 33, wherein the at least one data packet is at least partly
2 compressed.

1 35. A system of Claim 33, wherein the at least one data packet is transportable in the
2 Internet.

1 36. A medium, executable in a computer system, for routing packetized data between
2 a data carrier and destination address, the medium comprising:

3 a) program code for receiving and sending a data packet from and to the data
4 carrier;

5 b) program code for identifying a format of the data packet;

6 c) program code for processing the data packet according to the identified
7 format; and

8 d) program code for routing the processed data packet to a destination
9 address.